



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,485	06/17/2002	Nikolay Borisenko	GOW 0082 PA	9461

7590

03/04/2004

Killworth Gottman
Hagan & Schaeff
One Dayton Centre Suite 500
One South Main Street
Dayton, OH 45402-2023

EXAMINER

THOMAS, ERIC W

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 03/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,485

Applicant(s)

BORISENKO ET AL.

Examiner

Eric W Thomas

Art Unit

2831

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2831

Introduction:

The examiner acknowledges, as recommended in M.P.E.P. 707.04, the applicant's submission of the amendment dated 4/12/01. At this point, Claim 2 has been cancelled. Thus, claims 1, 3-14 are pending in the instant application.

Specification

1. The disclosure is objected to because of the following informalities:

Applicant uses "sulphuric", "carbonised", and "neighbouring" throughout the specification. Applicant is required to review and amend the specification to include --sulfuric--, --carbonized--, and --neighboring--.

Appropriate correction is required.

Claim Objections

2. Claims 1, 7-10, 12-14 are objected to because of the following informalities:

Claim 1, line 6, change "carbonised" to --carbonized--.

Claim 7, line 1, change "sulphuric" to --sulfuric--

Claim 8, line 1, change "carbonised" to --carbonized--.

Claim 9, line 2, change "carbonised" to --carbonized--.

Claim 10, line 1, change "neighbouring" to --neighboring--.

Claim 11, line 3, change "carbonised" to --carbonized--.

Claim 12, line 1, change "sulphuric" to --sulfuric--.

Claim 13, line 1, change "carbonised" to --carbonized--.

Claim 14, line 2, change "carbonised" to --carbonized--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3-6, and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3-6 depends on a cancelled claim. The examiner interpreted these claims as if they depended on claim 1.

Claim 10, lines 1-2, the limitation, "a single separator separates neighbouring cells" is confusing. It is suggested to applicant to change this limitation to --a single separator separates the at least one capacitive cell with another cell--.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 7, 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshida et al. (US 5,381,303).

Yoshida et al. disclose in fig. 1, 2, a high capacitance energy storage device, comprising: a housing electrically (8a, 8b) isolated from, and lined with, conductive, chemically inert separators (7a), said separators electrically connected to contacts

mounted on said housing (not shown); at least one capacitive cell having a first electrode (5a) separated from a second electrode (5b) by a non-conductive, chemically inert membrane (6), said electrodes formed of a carbonized and activated woven fabric impregnated with an electrolyte (see col. 1 lines 45-60) said cell being in electrical and mechanical contact with said separators.

Regarding claim 7, Yoshida et al. disclose the electrolyte is a sulfuric acid (see example 3).

Regarding claim 11, Yoshida et al. disclose a capacitive cell for a high energy storage device comprising a first electrode (5a) separated from a second electrode (5b) by a non-conductive chemically inert membrane (6), the electrodes are formed of a carbonized, activated woven fabric impregnated with an electrolyte, the chemically inert membrane permitting free passage of molecules of the electrolyte therethrough.

Regarding claim 12, Yoshida et al. disclose the electrolyte is a sulfuric acid (see example 3).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

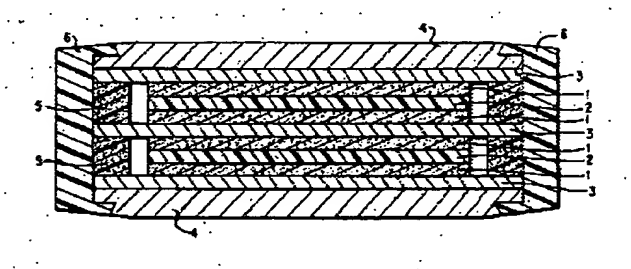
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8-9, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (US 5,381,303).

Regarding claims 8 & 13, Yoshida et al. disclose the claimed invention except for the carbonized activated woven fabric is formed from a hydrocellulose. Hydrocellulose is a well-known material used in the electric double layer capacitor art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the carbonized, activated woven fabric from hydrocellulose, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 9 & 14, Yoshida et al. disclose the claimed invention except for each electrode is formed of a plurality of layers of the carbonized, activated woven fabric. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form each electrode from multiple layers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

9. Claims 1, 3-7, 9-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hart et al. (US 3,652,902) in view of Yoshida et al. (US 5,381,303).



Regarding claim 1, Hart et al. disclose in fig. 1, a high capacitance energy storage device, comprising: a housing electrically (4, 6) isolated from, and lined with,

Art Unit: 2831

conductive, chemically inert separators (3), said separators electrically connected to contacts mounted on said housing (not shown); at least one capacitive cell having a first electrode (1) separated from a second electrode (1) by a non-conductive, chemically inert membrane (2), said electrodes formed of a carbonized impregnated with an electrolyte (see col. 4 lines 15-20) said cell being in electrical and mechanical contact with said separators.

Hart et al. do not disclose the electrodes are formed of a carbonized and activated woven fabric impregnated with an electrolyte.

Yoshida et al. teach the use of an activated carbon layer formed from an activated woven fabric.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Hart et al. using an activated woven fabric, since such a modification would provide a layer having a high dimension stability which facilitates handling during the manufacturing process and ensures high reliability.

Regarding claim 3, Hart et al. disclose the separators consist of graphite sheets (col. 3 lines 10-20, col. 3 lines 65-75).

Regarding claim 4, Hart et al, disclose the claimed invention except for the separators consists of a conductive rubber. Conductive rubbers are well known in the capacitor art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the separator of Hart et al. using a conductive rubber, since it has been held to be within the general skill of a worker in the art to

select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 5, Hart et al. disclose the claimed invention except for the separators consists of a conductive polymer film. Conductive polymer films are well known in the capacitor art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the separator of Hart et al. using a conductive polymer film, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 6, Hart et al. disclose the separators are formed from a graphite foil.

Regarding claim 7, Hart et al. disclose the electrolyte is a sulfuric acid (col. 5 lines 10-25).

Regarding claim 10, Hart et al. disclose the capacitor further comprises a single separator (3) that separates another capacitor cell from the capacitor cell.

Regarding claim 11, Hart et al. disclose in fig. 1, a capacitive cell for a high energy storage device comprising a first electrode (1) separated from a second electrode (1) by a non-conductive chemically inert membrane (2), the electrodes are formed of a carbonized, activated woven fabric impregnated with an electrolyte, the chemically inert membrane permitting free passage of molecules of the electrolyte therethrough.

Regarding claim 12, Yoshida et al. disclose the electrolyte is a sulfuric acid (col. 5 lines 10-15).

Conclusion

In order to ensure full consideration of any amendments, affidavits, or declaration, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116 which will be strictly enforced.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

4,408,259 – discloses an electrochemical double layer capacitor.

4,709,303 – discloses an electric double layer capacitor.

5,072,336 – discloses an electric double layer capacitor having polarizing electrodes, two layers of conductive metal evaporated films.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is (571) 272-1985. The examiner can normally be reached on M, T, Sa 9:00AM - 9:30PM; W, Th, F 5:30PM-10:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (571) 272-1984. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2831

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ewt

Eni 2. 
3/01/04